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PRELIMINARY NOTICE OF A NEW PROBOSCIDEAN AMEBELODON FRICKI, gen. et sp. nov.

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THE NEBRASKA STATE MUSEUM

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PRELIMINARY NOTICE OF A NEW PROBOSCIDEAN AMEBELODON FRICKI, gen. et sp. nov.

BY ERWIN HINCKLEY BARBOUR

Pursuant to advice from Mr. A. S. Keith of Freedom, Frontier County, Nebraska, the first Morrill Geological Expedition of the year was organized with Mr. Philip Orr in charge, and Mr. Keith's farm was visited at once, and on April 4th, 1927, the mandible, one rib, and a toe bone of a new proboscidean were procured.

It is a longirostral mastodont, the mandible of which has unusual length, and the tusks unusual modifications. The specimen is numbered 4-4-27, Morrill Geological Collections, The Nebraska State Museum.

In popular language the early proboscideans were four-tuskers, the later were two-tuskers, and the new longirostral mastodon under discussion was a shovel-tusker. We are naming it Amebelodon fricki, in recognition of Professor Childs Frick. A family, the Amebelodontidae, should be established.

The group of broad-tusked proboscideans, dating from Phiomia osborni, may be conveniently designated the shovel-tuskers or the amebelodonts.

The expanded, trough-like mandible, the broad, flat tusks, and the manner in which they are worn suggest to every beholder the idea of adaptation for shovelling soft earth, sand, or perhaps mud. Can it be that this extraordinary mandible was used in dragging out fresh-water seaweed or in digging up pond lilies, cat-tails, reeds, and the like? How could the jaw have functioned as a shovel when at its narrowest point it shows such structural weakness? The mandible seems none too strong for the support of its own load, and altogether inadequate to perform work, nevertheless the conviction remains that the broadened tusks and flared mandible functioned in some way as a shovel. The great leverage as well as the apparent structural weakness must be taken into account. Possibly the trunk was wound around this unique shovel-jaw to give it muscular reinforcement.

However this may have been, the tusks seem to have formed a great shovel, and the mandible a great trough. The huge,

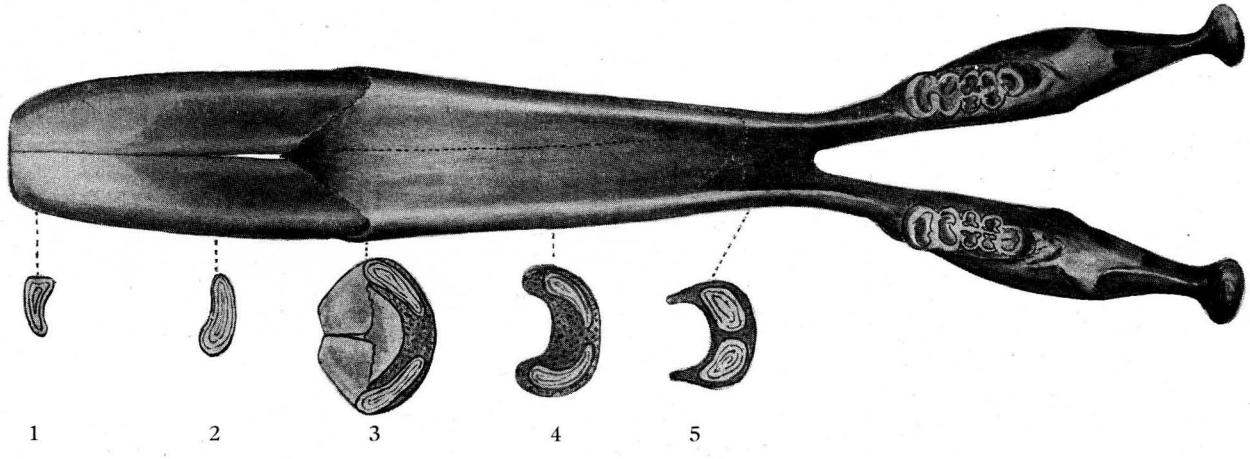

Fig. 89. Mandible of an advanced trilophodont, Amebelodon fricki, x 1/13. Freehand sketch with the specimen still in plaster cinches. Though the drawing is essentially correct, for the cinches were turned back giving a plain view, yet it is necessarily subject to correction. It may be three or four inches too long. The jaw constitutes a shovel and trough. The bone is whitish and free from pits and roughness. The tusks are of ivory whiteness and are worn, flattened, and polished at the tips. Collection of Hon. Charles H. Morrill.

Section 2, 140 mm (5½ inches). Section 3, 273 mm (10¾ inches) broad. Section 5, 190 mm (7½ inches). The dotted line indicates the size and shape of the tusks. Section 5 shows the expansion at the base of the tusks.

flared mandible is narrowest and weakest at the point of greatest stress, near the rami, where it is still further weakened by the expansion at the roots of the tusks, and by the three vascular foramina. See Fig. 89 Section 5.

True, similar expansions are to be noted in other tetrabeledons but in this case they are extreme. They fill the entire space with the exception of a wall of bone scarcely a half inch thick. See Fig. 89 Section 5.

It seemed improbable that a mandible longer than that of Megabelodon lulli could be found, yet this one passes it in all respects. The shovel-mastodon must have carried its head high in order that the protruding mandible could clear the ground, and not interfere with progression. Fortunately the specimen is essentially perfect. The tusks have the whiteness and the density, as well as the decussating lines of ivory. The bones are whitish and firm, and the molars almost unblemished. At this writing the specimen lies on the sand-table with cinches turned back and the parts matched and mostly fitted together. The molars are large, 9 x 3½ inches, and each has five broad grinding ridges distinctly trefoiled. From the cingulum on the outer border, rise many short blunt cones.

While collecting in this region on other occasions the writer judged the formation to be late Pliocene, or possibly early Pleistocene. The Columbian mammoth is of common occurrence here. Although contradictory and unexpected, five occurrences of this mammoth with Teleoceras were noted and the teeth of advanced horses were collected. Teleoceras belongs to the Miocene and early Pliocene, but may have persisted through the Pliocene. According to the evidence at hand this longirostral mastodont persisted through the Pliocene, possibly to the Pleistocene, and may have been a contemporary of mastodons and mammoths.

The excessive development of the mandible of this progressive amebelodont gives support to the conception that the upper tusks may have been dwarfed, or possibly aborted.

Due to the confusion incident to moving from the old Museum to the new, the facilities of the library and cabinets are unavailable. Although ample proboscidean material is at hand for comparison it is still crated. In a few weeks this fine jaw will be ready for exhibition, at which time it will be photographed, carefully figured, and described at greater length.

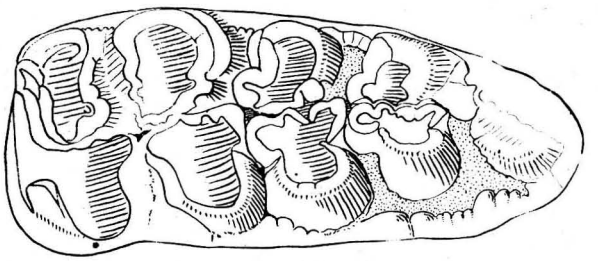

Fig. 90. Left lower molar, M_3, of Amebelodon fricki, x ⅓. Length 230 mm (9 inches), width 93 mm (3⅝ inches). The cement is indicated by stippling.

MEASUREMENTS (subject to corrections)

Total length of mandible to tip of tusk estimated	7	ft.,	2133 mm
Length of symphysis	31	in.,	788 mm
Extreme width of mandible	10¾	in.,	273 mm
Width of mandible at narrowest point	7	in.,	178 mm
Depth of mandible at narrowest point	8.5	in.,	216 mm
Thickness of mandible at the molars	5	in.,	127 mm
Depth of mandible at the molars	6.5	in.,	165 mm
Spread at the coronoids	19	in.,	482 mm
Transverse diameter of the condyle	5	in.,	127 mm
Total length of mandibular tusks	48	in.,	1220 mm
Length of the portion wholly embedded in the jaw	23	in.,	585 mm
Total length of exposed tusk	25	in.,	635 mm
Width of tusk	5½	in.,	140 mm
Thickness of tusk about	2	in.,	50 mm

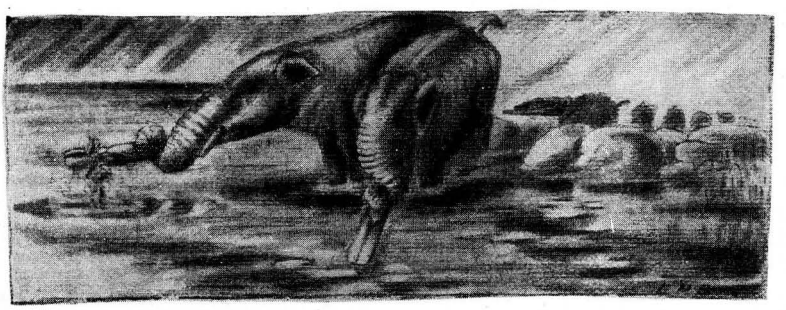

Fig. 91. Imaginative sketch of Amebelodon showing the great protruding shovel-like mandible, which may have been used to drag out aquatic plants or to dig in sand and soft soil.

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